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A COCOONING RACK [1]

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Insect Investigations

A cocooning rack is used in making a life-history study of insects that form cocoons in which they transform to pupae and adults. The cocooning rack used in studying the life history of the lima bean pod borer (Etiella zinckenella Treit.) permits the making of daily observations on development of the larvae and pupae in their cocoons without disturbing them.

Construction and Operation

A rack that will hold 100 larvae is made from a piece of board 24 inches in length, 2¼ inches in width, and ¾ inch in thickness. On the 2¼-inch surface, starting 3 inches from the end, fifty grooves, ¼ inch apart, are sawed ⅛ inch in depth and ⅛ inch in width. The grooves are covered with a piece of glass 2¼ inches in width and 22 inches in length, held in place on the board with rubber bands, one at each end and one in the center. A plug of cotton is placed in each groove at the center and the grooves are numbered. By dividing the grooves with the plug of cotton, two larvae can be placed in each groove. After the larvae are placed in the rack the open end of the groove is closed with a loose plug of cotton. When the larva completes its cocoon, observations can be made by sliding the glass lengthwise under the rubber bands. The sliding of the glass breaks the part of the cocoon attached to the glass from the remainder of the cocoon and exposes the larva to view. The glass should be moved back to its former position after the observation is made. If the cover glass is not placed back in position so that the cocoon is closed, the larva will spin another cocoon on the glass surface.

Figure 1 shows a picture of a rack with the glass moved to show the exposed larvae and pupae in their cocoons.

Figure 2 shows a rack before the glass and plugs of cotton are in place.

Figure 3 shows how the glass is held in place with a rubber band.

This piece of apparatus is inexpensive and easily constructed. By varying the size of the grooves to conform with the size of different larvae, it could be used in the life-history study of many insects.

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[1] A similar device was devised by E. R. Van Leeuwen previous to 1921, but the author had no knowledge of the device until his attention was called to it by a reviewer. This suggests the possibility that by publishing a description of this device in the ET series it will be available for other workers who could use it in their work.

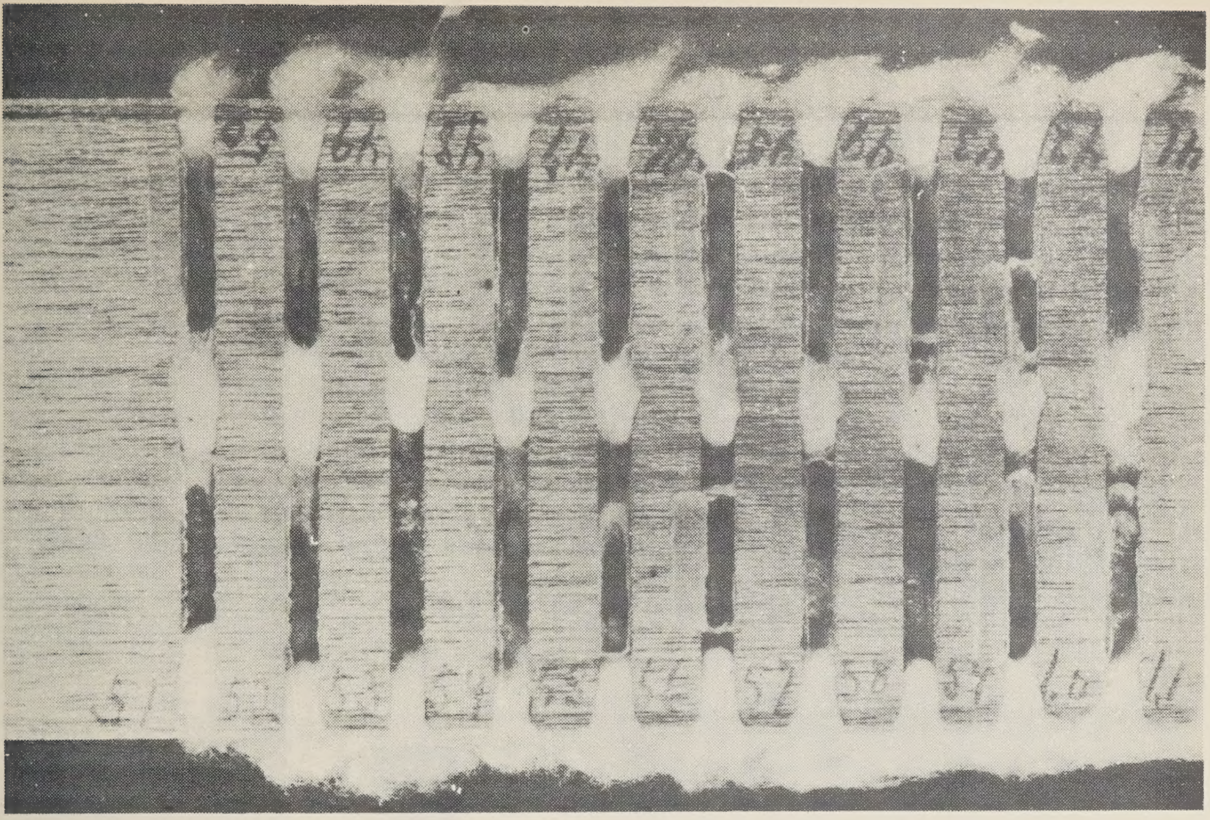
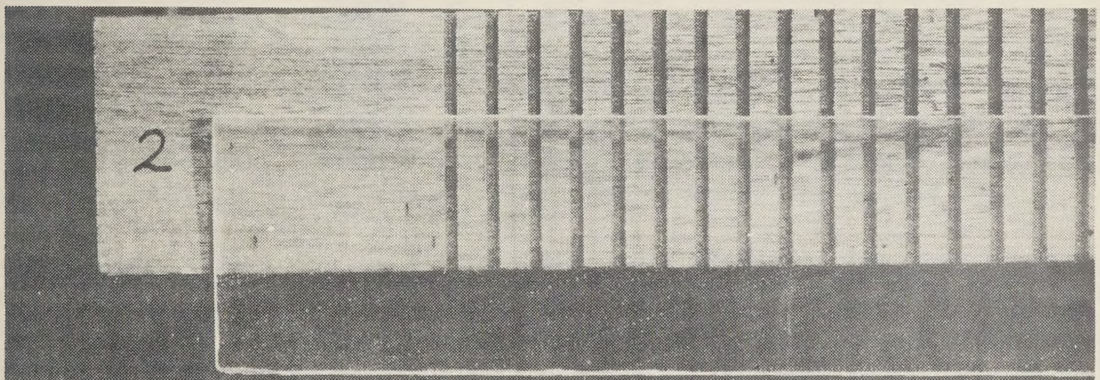


Figure 1.--Rack with glass cover moved to show larvae and pupae.



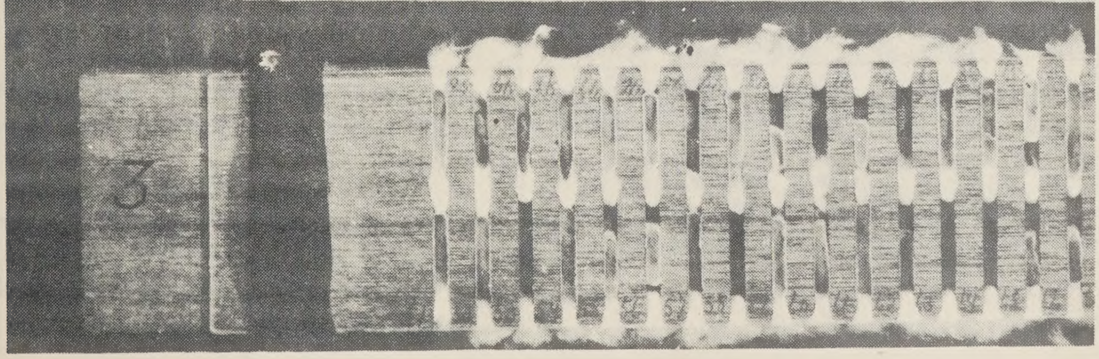


Figure 2.--Grooved board and glass cover for cocooning rack.

Figure 3.--Rack in use and glass cover held in place with rubber band.